Supplementary Material (ESI) for Chemical Communications


## ESI (Electronic supporting information)

# High effectiveness of oligothienylenevinylene as molecular wires in Zn-porphyrin and $C_{60}$ connected systems

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**Fig. S1**. $^{1}$H NMR of compound **4a**

**Fig. S2**. $^{13}$C NMR of compound **4a**

**Fig. S3.** Mass Spectrum of compound **4a**

**Fig. S4**. $^{1}$H NMR of compound **4b**

**Fig. S5**. $^{13}$C NMR of compound **4b**

**Fig. S6**. Mass Spectrum of compound **4b**

**Fig. S7.** Optimized structure and HOMO and LUMO of $H_2$P-2TV-$C_{60}$ and $H_2$P-4TV-$C_{60}$

**Fig. S8.** Absorption spectrum of **4b** in toluene.

**Fig. S9.** Time-resolved fluorescence spectra of **4a** in (a) toluene and (b) PhCN; black for 0-1 ns and blue for 1-2 ns; $\lambda_{ex}$ = 410 nm.

**Fig. S10**. Fluorescence decays in the 610-640 nm region of (a) (i) **1** in toluene, (ii) **3a** in PhCN, (iii) **4a** in PhCN, (iv) **4a** in toluene and (b) (i) **3b** in PhCN, (ii) **4b** in toluene, (iii) **4b** in PhCN; $\lambda_{ex}$ = 410 nm.

**Fig. S11.** Transient absorption spectra of **4a** (0.1 mM) (a) in Ar-saturated toluene and (b) in Ar-saturated PhCN obtained by 355-nm ns laser light irradiation. Insert: Absorption time profiles.

**Fig. S12.** Transient absorption spectra of **4b** (0.1 mM) (a) in Ar-saturated toluene and (b) in Ar-saturated PhCN obtained by 355-nm ns laser light irradiation. Insert: Absorption time profiles.

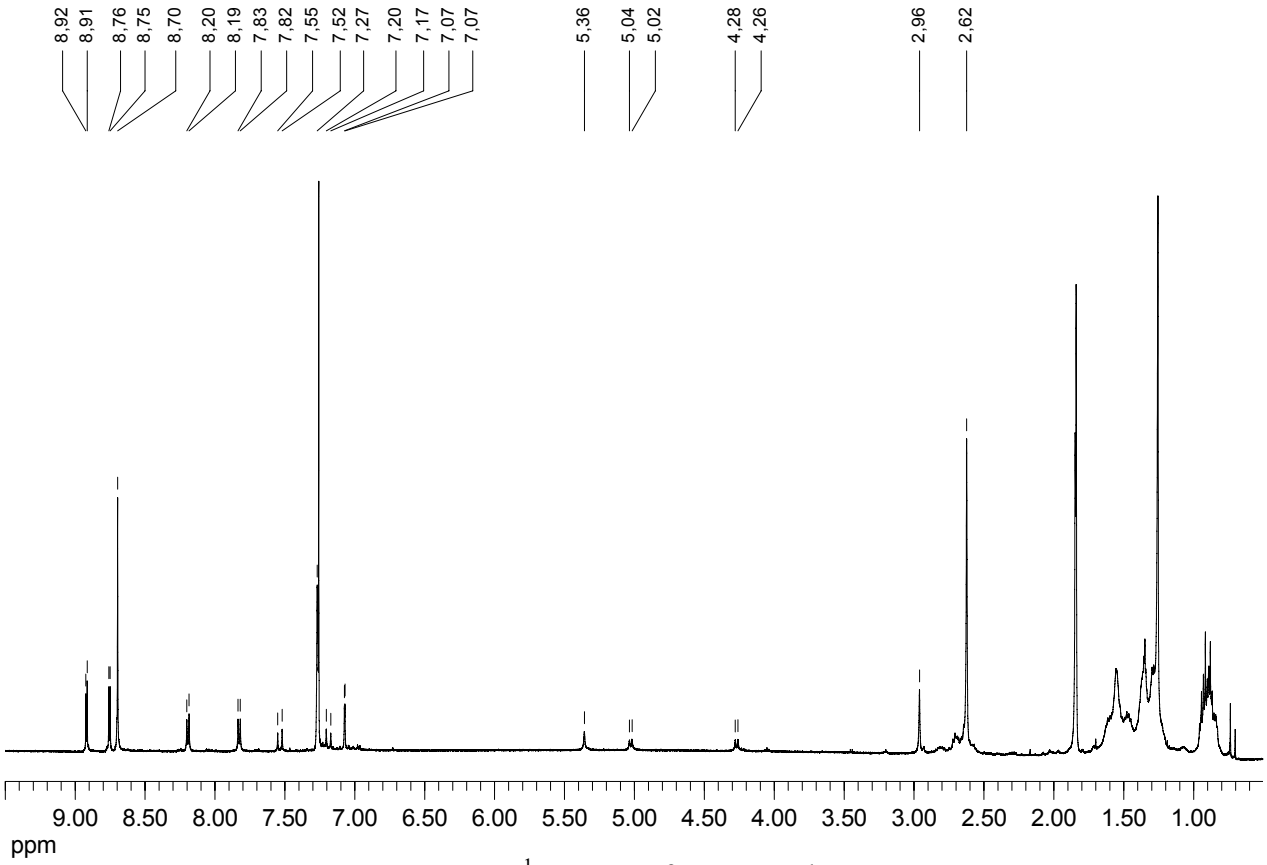



**Fig. S1**. $^{1}$H NMR of compound **4a**

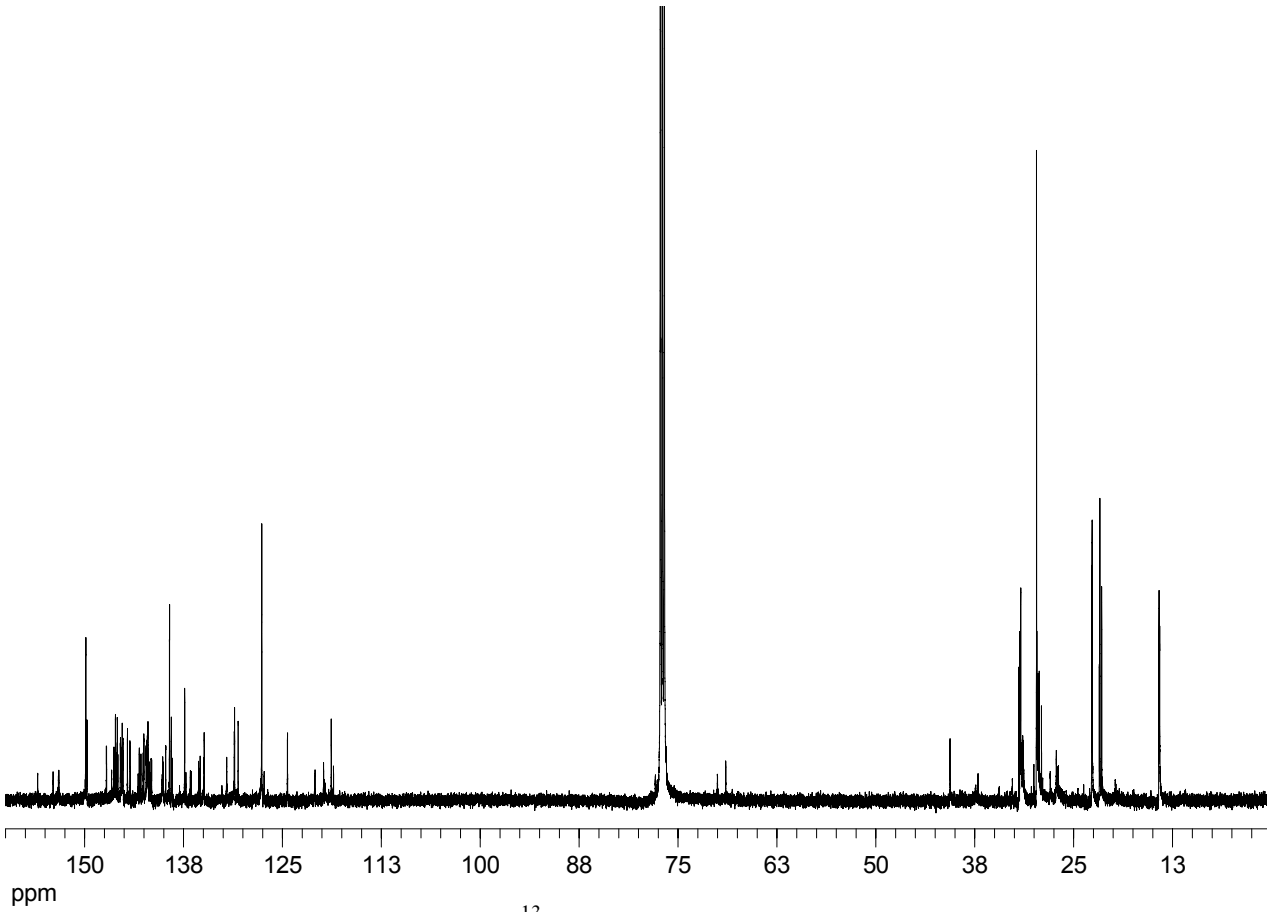



**Fig. S2**. $^{13}C$ NMR of compound **4a**

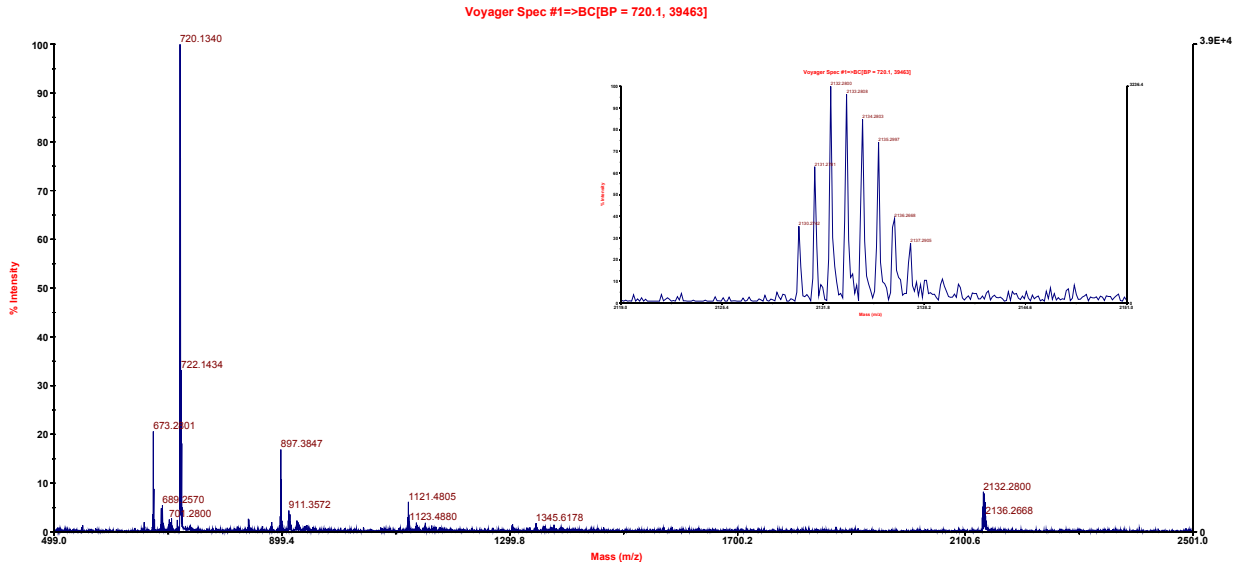



**Fig. S3**. Mass Spectrum of compound **4a**

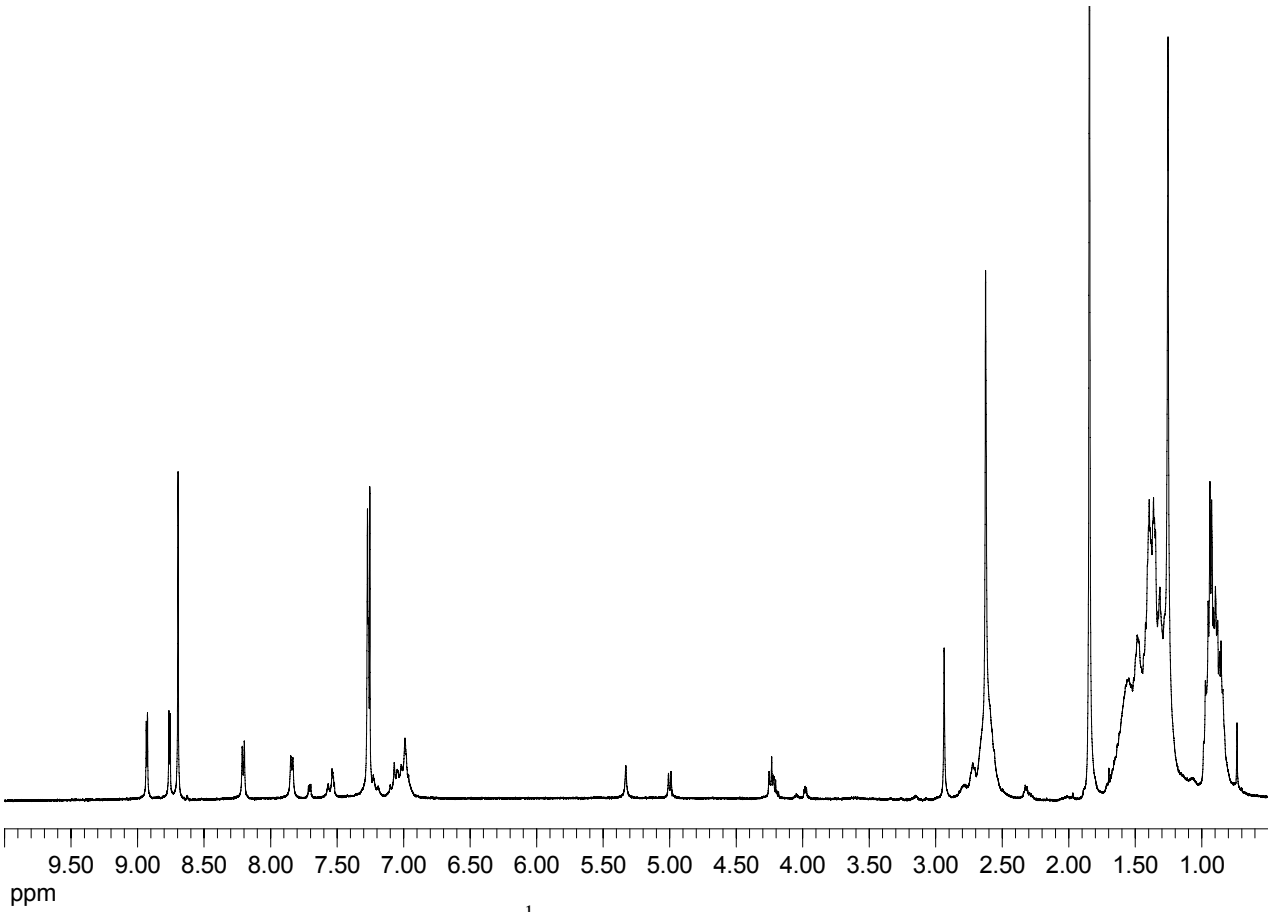



**Fig. S4**. $^{1}$H NMR of compound **4b**

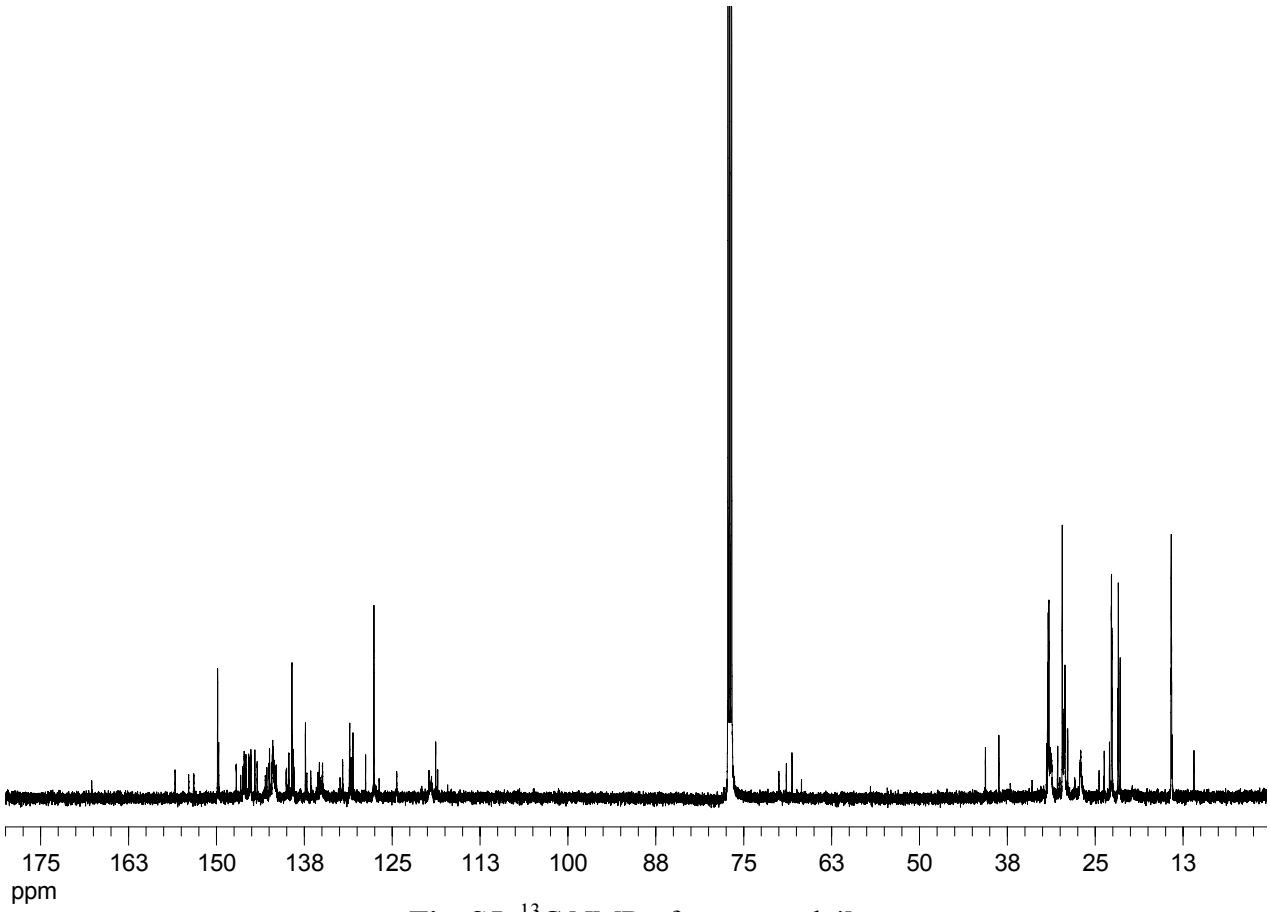



**Fig. S5**. $^{13}C$ NMR of compound **4b**

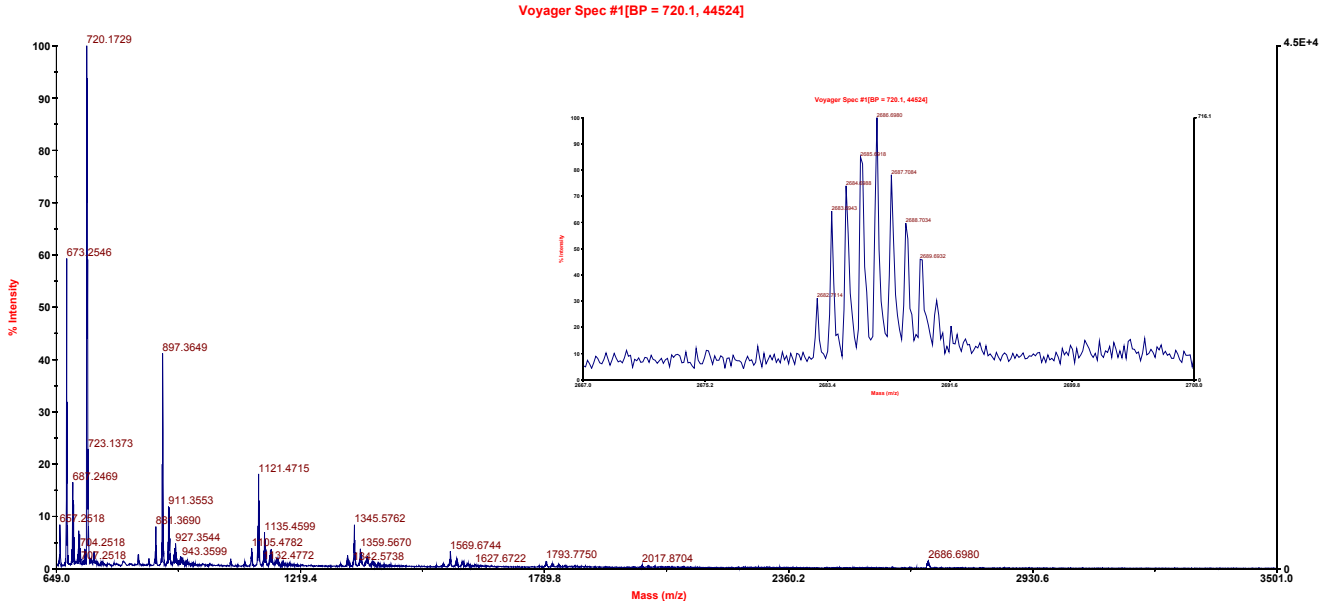



**Fig. S6**. Mass Spectrum of compound **4b**

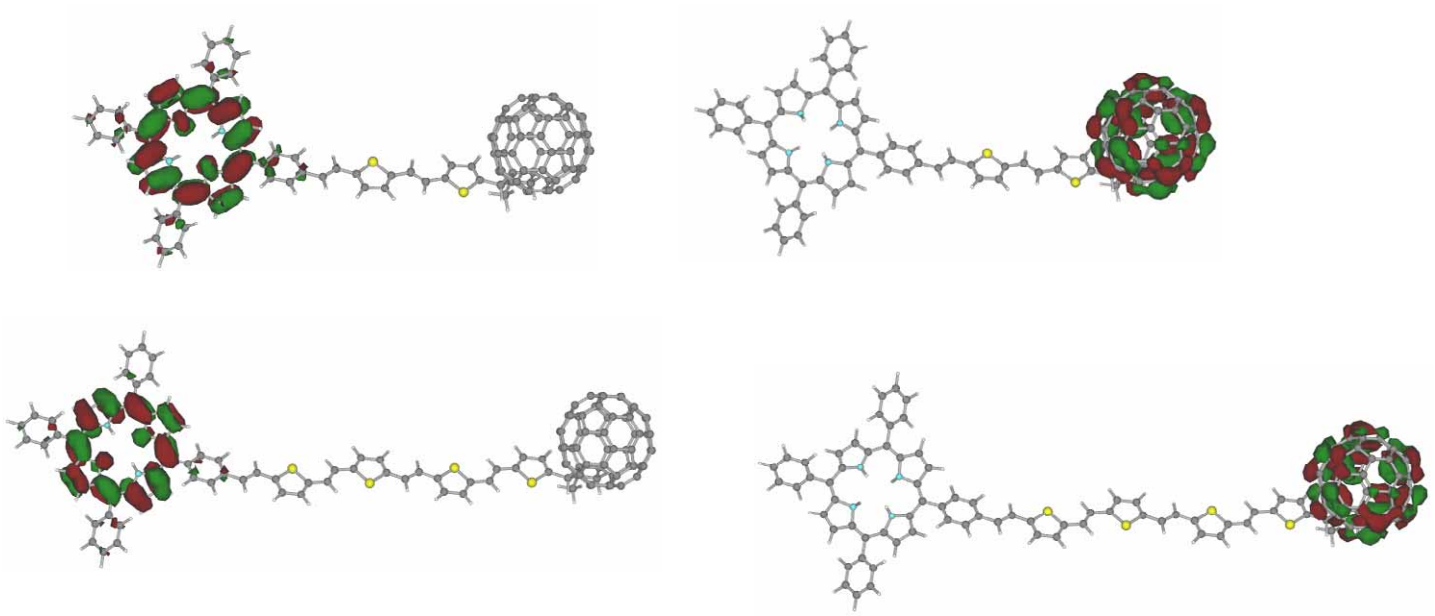


**Fig. S7**. Optimized structures, and HOMO and LUMO of $H_2P$-2TV-$C_{60}$ and $H_2P$-4TV-$C_{60}$.

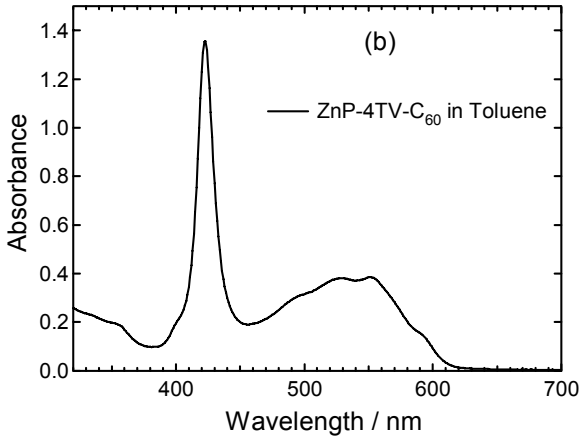
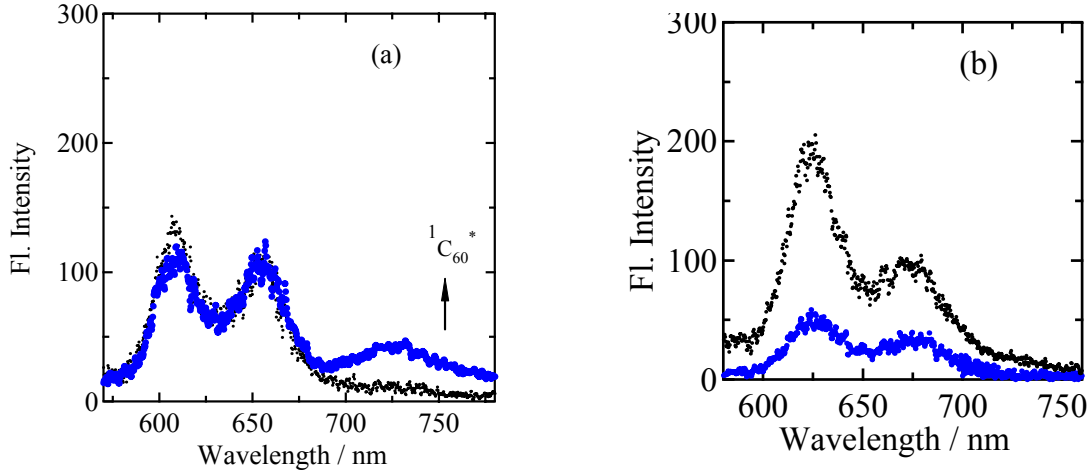



**Fig. S8.** Absorption spectrum of **4b** in toluene.

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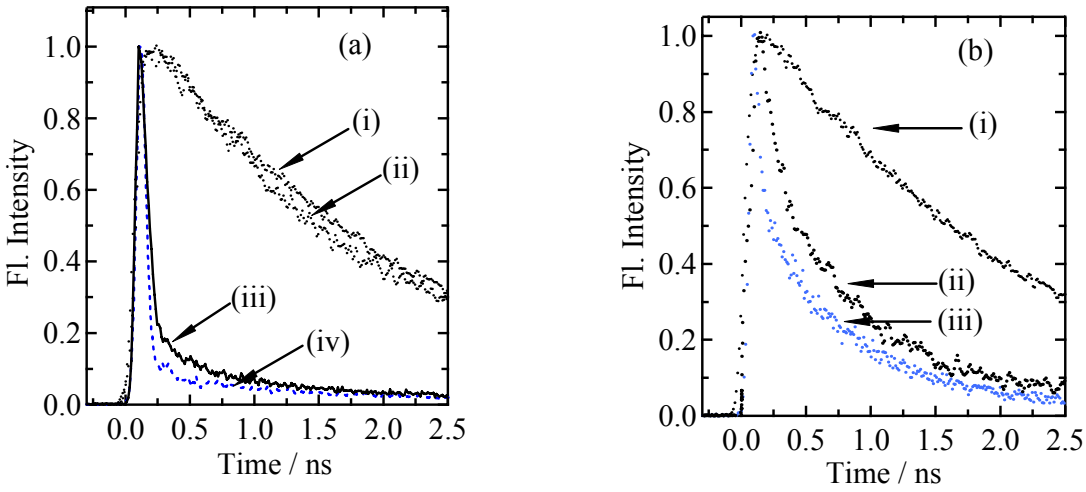


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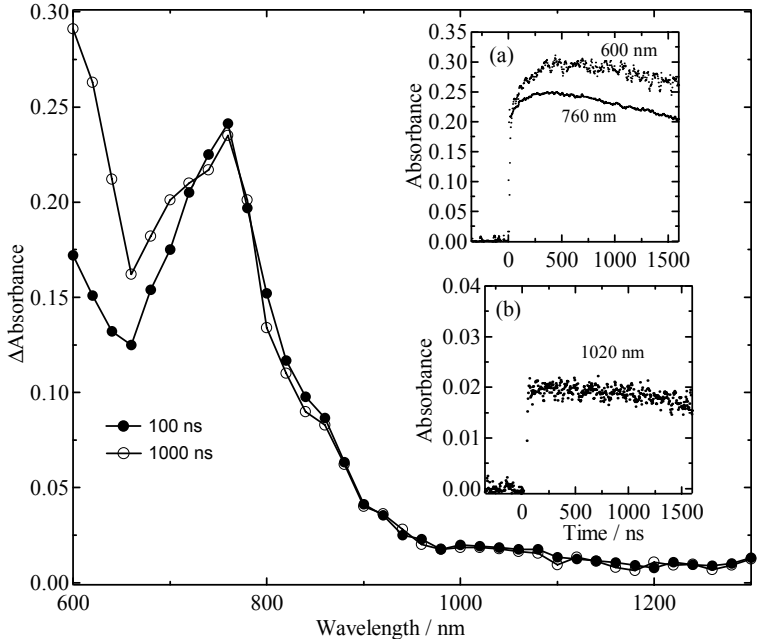


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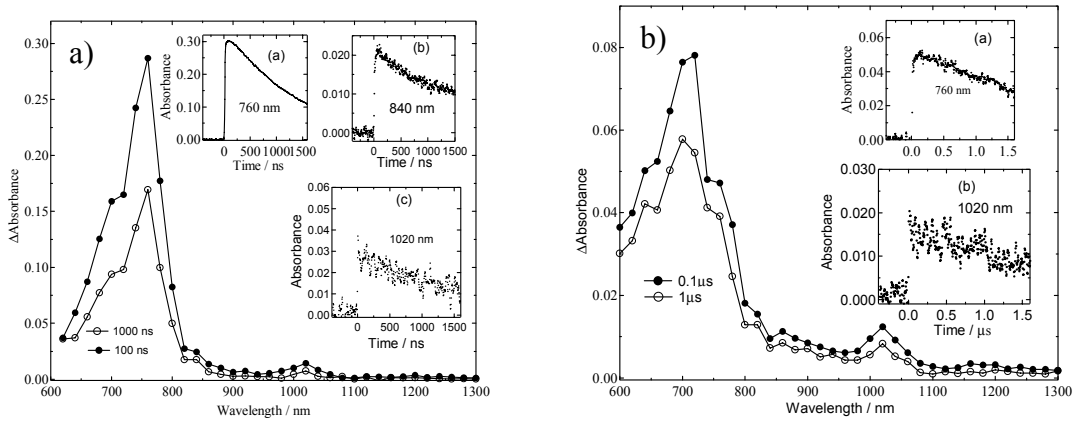


**Fig. S12.** Transient absorption spectra of **4b** (0.1 mM) (a) in Ar-saturated toluene and (b) in Ar-saturated PhCN obtained by 355-nm ns laser light irradiation. Insert: Absorption time profiles.